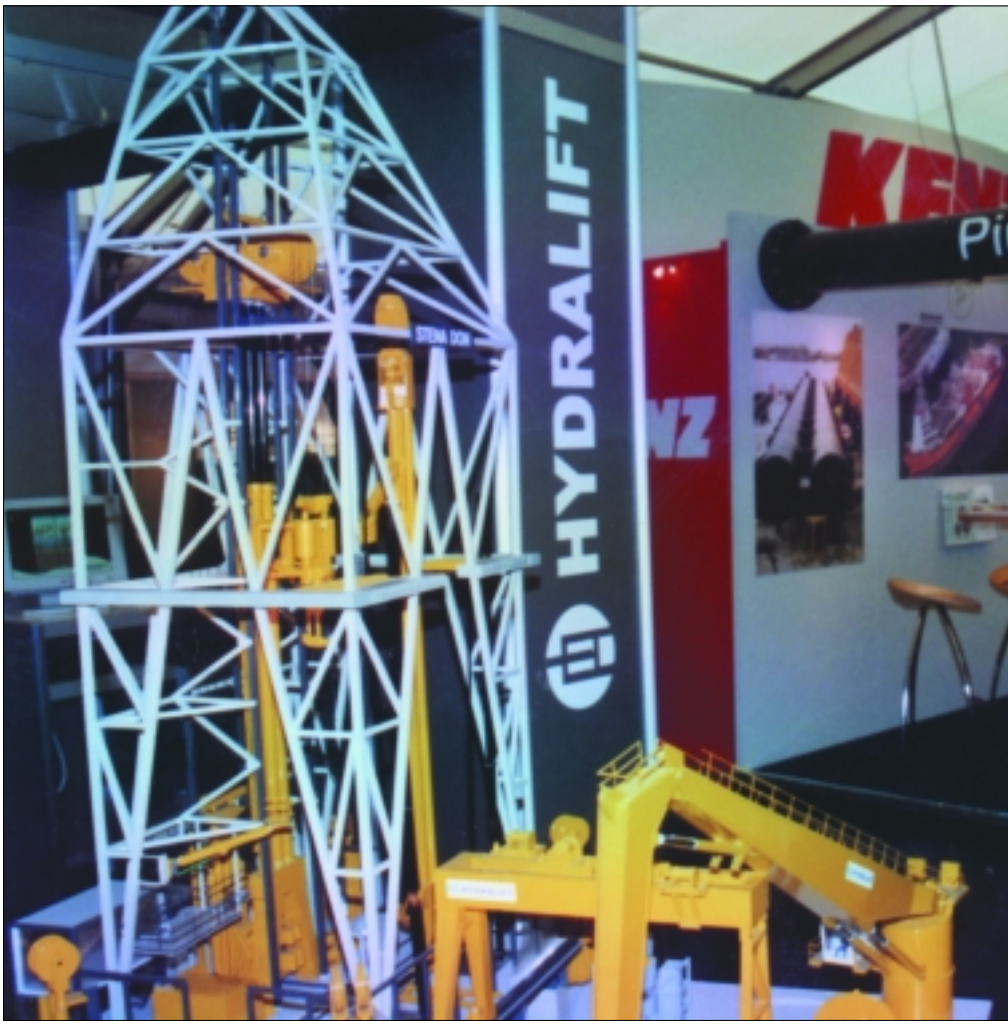
Offshore industry

Lindsay Gale reports from the Offshore Europe exhibition in Aberdeen on news from the offshore lifting sector.

Offshore Europe, the biennial European oil and gas industry exhibition and conference opened its doors to some 20,000 visitors and delegates in an up-beat mood from September 4-7. This mood was a refreshing change from the previous event, when 'doom and gloom' was a dominant feature amid fears that the price for the industry's primary product would fall to as low as $10 per barrel. The event was officially opened by Brian Wilson MP, the UK's Energy Minister, who stated "It's already discernible, the mood at 'Offshore Europe' is upbeat. There is a real buzz about the place that sends a strong message to the world that the United Kingdom Continental Shelf is still a great place to do business.

Articulating boom cranes can offer advantages



All this is very different from two years ago".

Boom or bust?

However, this optimistic view of the state of the industry is, to some extent, contradicted in a recent report from Norway's Norland Consultants. According to their findings, capital expenditure on offshore field developments is actually expected to fall from a peak of US$498bn in 2002 to just over US$378bn in 2005. The report goes on to say that expenditure will decline in Latin America, north west Europe (the UK in particular, where spending will drop from 10.68bn in 2000 to 7.48bn in 2005), the former Soviet Union and the Middle East. The Atlantic Triangle of Brazil, West Africa and the Gulf of Mexico will see increased investment.

However, one key point of note in this report is that expenditure on deep water field developments, totalling some $48bn in 2000, are set to exceed £148bn in both 2001 and 2002 and will then settle at around £108bn in 2004.

So where does the crane industry fit into this scenario in which the emphasis is likely to be more on subsea installations serviced by a floating surface vessel or platform? According to Karstein Berge Meling, from Hydralift: "Conventional cranes, such as lattice booms, are still the majority of what we sell to offshore platforms. We have some with booms of some 60m length and are in discussion on other projects where the booms are 70m in length. These are primarily for large fixed platforms". He went on to say "There are nor really any

focuses on safety

Hydralift believes that conventional lattice boom cranes are still in the majority

major drivers where technology is concerned. Obviously, a more advanced hydraulic control system is fitted than would have been seen 10 years ago. The cranes are very smooth to operate and good ergonomic design is of importance to ensure a comfortable and efficient environment for the operator, with joystick control, but they are still traditional designs. Today, it is more a matter of having well trained personnel and good maintenance".

Knuckle boom cranes

However, Hydralift has been at the forefront in the supply of another configuration that is beginning to find use on floating (and some fixed) installations - the knuckle boom crane. Indeed, the company very recently announced it had gained a contract with Santa Fe to fit two such units to a semi-submersible platform. According to Meling, "Safe load handling is the main benefit this configuration offers. The idea with this crane type is you reach with the boom all the way down to the deck, eliminating the pendulum effect that can arise with a longer wire length as a floater reacts to dynamic movements. These cranes can be used for unloading from supply vessels and, with a special yoke fitted, to handle pipes and risers on the vessel". However, not all are convinced that this crane type is really suitable for over-the-side use. While they concede that for on-board handling, the reduced pendulum effect is of benefit, the dynamics involved on off-loading from a supply vessel, for instance, are such that difficulties may be encountered with knuckle booms. The jury would appear to be out.

Given that activity is shifting to deeper waters using floating installations, it might be reasonable to assume that active heave compensation systems would interest the offshore operators. This would indeed appear to be the case, with Hydralift supplying cranes fitted ▶

An intrinsically safe remote release crane hook system was launched

with similar systems for special applications such as use on diving vessels. Kenz, too are seeing growth in this sector. According to Sim Bakker, Sales Manager with Kenz: "We are supplying large cranes with AHCS for subsea applications to 2,000m water depth. I would not want to say it is a booming market, but we have delivered quite a number to this sector. The cranes themselves are no different to those we supply for fixed platforms - it is the AHCS that makes them special". AHCS can, however, come at a price. Depending on the complexity of the system required, such an AHCS can make up 20 to 25% of the total cost of the delivered crane. Once again, however, there appears to be some who have doubts concerning the effectiveness of current systems, especially where deepwater subsea installations are concerned. They contend that the length of wire that has to be run out to service such an installation and the effects that underwater currents can have conspire to undermine the effectiveness of heave compensation. Ship movements can be compensated for but the behaviour of the load underwater is often difficult to predict.

Environmental concerns

Another area that is beginning to exercise the minds of designers and manufacturers is common to every industry - concern for the environment. As an example of this, National Oilwell is building a 96 Model king-post crane that will be powered by an AC electric drive in place of the traditional diesel. While AC drives have the capability of being programmed to provide precise performance to suit the application, the primary reason for its use on this crane is the fact that AC power is clean, with no direct exhaust emissions. This crane will be supplied into the USA, but the company believes that as emissions legislation tightens its grip, such systems will increasingly be a requirement around the world.

One fact was clear after talking to the manufacturers present at the show. The offshore industry is a somewhat unique marketplace, with each crane delivered being custom tailored to the specific application and company preferences. While major components may be of a standard design, there the similarity ends. Cabs, power supply and operating parameters all will be specific to a given customer and installation, and crane design often proceeds in parallel with overall project planning. As a result, new crane models were not in evidence, with the exception of the MTC 1400-60 D Litronic luffing mast crane from Liebherr's offshore division, available with either a diesel engine or AC electric drive, and featuring non-metallic bearings and bearing pads. This new crane has a lifting capacity of 60 tonnes and a maximum outreach of 39.5m. The company has historically been active in the North Sea but, as capital expenditure in this region is projected to decline, this new unit is firmly targeted at use in the Gulf of Mexico, as part of Liebherr's desire to make inroads into this, and other, growing geographic markets.

Remote release

A small number of component suppliers were also exhibiting at Offshore Europe. It was one of these that supplied a 'world's first' for the show. Hamilton Safety Enhanced Tools launched an intrinsically safe remote-release crane hook system for use in Zone 1 hazardous areas where gas may be present. The device is intended to help the offshore industry meet its health and safety target of a 15% reduction in accidents involving lifting and mechanical handling by 2004. The new unit is designed to eject a master link or wire strop from a hook by remote control, thus eliminating the need for workers to enter the unhooking danger area. Powered by compressed gas (either air or nitrogen) charged to 200psi, once activated the device raises the ejection lever in the hook and releases the lifting gear. The key design feature of the hook is fail-safe safety - it cannot discharge a master link while under load. While larger than a standard grab hook, the remote release system hook has been designed with a minimised profile to reduce weight and a robust, user-friendly handle enables easy 'grabbing'. In addition to the automated safety latch system, an external 'anti-snagging' latch can be fitted if required.

With a conference running in tandem with the exhibition covering such areas as exploration, geology and geophysics through reservoir management, production, well engineering and field development to decommissioning, the visitors from 87 countries, demonstrating the increasingly global nature of the offshore industry, are sure to have had their information needs well and truly met. ■